

# PROFILES IN soil health

Darryl Crowley

Poplar, Montana

11,000 acres

Crops: spring wheat, durum wheat,  
lentils, peas, canola,  
& garbanzo beans

Planting: All No-till

Covers: cocktail mix that includes  
canola, radishes, turnips,  
millet, corn, hairy vetch, and  
small grains



## Montana Man Masters Farming for Soil Health, More Profits

*Lemmon dal* in India, *sopa de lentejas* in Spain, and *soup aux lentilles* in Morocco are three dishes that have one thing in common: their main ingredient is lentils. If you look hard enough, lentils in each of these dishes could be traced to Darryl Crowley's farm in Poplar, Mont. Crowley is the man who grows the lentils—and the spring wheat, peas, durum, canola, and garbanzo beans. He has leased his land from the Fort Peck Tribe for more than 36 years, and has pioneered no-till and conservation cropping in the area.

A third generation farmer, Crowley says he knew that he needed to take an approach different from the wheat and chemical-fallow rotation typically used by farmers in the area. Working with the USDA Natural Resources Conservation Service (NRCS), Crowley developed a comprehensive plan to increase his crop yields, market his crop internationally, decrease his expenses, and improve his soil health.

Some years he grows peas and wheat, some years garbanzo beans, some years lentils. His cropland is planted using a no-till system that minimizes chemical use.

"The first 10 years we did this, everyone thought we were silly," says Crowley, when asked about his neighbors' reactions to his continuous cropping. Now, almost 30 years later, most of his neighbors have switched over to a similar system.

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According to the Northern Great Plains Research Laboratory, a USDA Agricultural Research Service facility, a dry peas-wheat rotation in North Dakota would average a 10 percent increase in wheat yield. Adding peas or beans into the rotation improved diversity, increased wheat yields and provided a means to generate income in what would have been fallow years.

*We went from using between 15,000 and 20,000 gallons of fuel to half that.*

*- Darryl Crowley, landowner*

Crowley came up with a creative solution to marketing the alternative crop he began growing in 1995; he put it on the international market. About 80 percent of lentil and garbanzo bean crops, which are not traditionally grown in northeastern Montana, were exported for sale. In 1995 the only place the Crowley farm could send its lentil and garbanzo bean crop was to Canada. Now, local grain elevators take their crop, transport it to the coast, and ship it overseas. It is likely that many international dishes will have originated in eastern Montana soil.

While Crowley profits from his cropping system, he also has managed to decrease his expenses.

The no-till system, along with precision application methods for applying herbicides and fertilizers which greatly increase efficiency, has decreased his trips over the field. "We went from using between 15,000 and 20,000 gallons of fuel to half that," he says.

The farm also raises cattle, which consume some of the crops grown. "Everyone with livestock benefits twice," Crowley says. Growing cover crops reduces erosion, and grazing these cover crops provides cattle with additional forage.



**Darryl Crowley**, a farmer on the Fort Peck Indian Reservation, grows peas on his farm under a continuous cropping, no-till system.

Crowley says he has noticed a dramatic change in the soil. "People with the dust storms are the people who conventionally till," he says.

He notices less water runoff, less dust, and that he no longer has to fix the ridges caused by water erosion. Standing on his cropland, he points out that the soil is a darker, healthier color. Aggregates, clods of soil that are indicators of soil health, form easily. By growing a diverse range of crops and applying a no-till system, Crowley has made the soils more productive while decreasing farming expenses.

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United States Department of Agriculture  
Natural Resources Conservation Service